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Nutrition Knowledge: You Are What You Eat

When it comes to healthier diets, research and education programs are helping Americans do the right thing.

America's food supply is the world's safest and most affordable, comprising nearly one-quarter of the U.S. economy. Nevertheless, diet-related chronic diseases are all too common. In fact, poor diets and nutrition contribute to five of the 10 leading causes of death (heart disease, cancer, stroke, diabetes and arteriosclerosis), costing the U.S. economy an estimated \$250 billion annually— without even considering the social costs. To help begin the healing process, the U.S. Department of Agriculture (USDA)/Land-Grant university partnership in nutrition research and education is improving the quality of the American diet and reducing health care costs in measurable ways.

Payoff

- **Kids' stuff.** Cornell has developed an award-winning "Kitchen Science for Kids" program that teaches youngsters, age 5 to 12, about the importance of good nutrition. A 36-page publication includes books, exercises, experiments and recipes that introduce them to the USDA Food Guide Pyramid and other healthy do's and don'ts. The extension program has been distributed nationally through 4-H program and was selected as a "best buy for teachers" by *Scholastics* magazine. Thousands of copies have been sold throughout the United States and Canada.
- **Folate findings.** When the Food and Drug Administration recently revised its recommended daily allowance (RDA) for folate or folic acid, the change was based largely upon **Florida** research showing deficiencies in this vitamin could increase the risk of anemia, birth defects and heart disease. Since cell division depends on folate, adequate amounts of the vitamin are critical for normal fetal growth and development while aging adults need it to repair cells.
- **Friendly fatty acids.** Fatty acids in some animal products have been linked to obesity and heart disease, but researchers at **Georgia, Purdue** and **Penn State** have found that a common type of fat found in red meats and cheeses may ward off diabetes and cancer. Their studies indicate conjugated linoleic acid—CLA—may

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prevent the onset of diabetes and cancer in laboratory animals, at least in the short term. Researchers at Missouri's **Lincoln University** have found that increasing omega-3 fatty acids (found in marine fish oils) in the diet reduces blood pressure and cholesterol in moderately hypertensive people.

- **Low fat that tastes like full fat.** While dairy products are a great source of calcium, many have a high fat content. On the other hand, the watery, bluish appearance of skim milk and poor flavor of many low-fat cheeses turn off some consumers. To give low-fat products a better chance in the marketplace, researchers at **Maryland, Ohio, Utah** and **Wisconsin** are identifying flavor compounds that will give these products the same sensory properties as their full-fat counterparts. The research is enhancing the flavor and texture of skim milk and cheese, making them more acceptable to health-conscious consumers.
- **Conquering colon cancer.** The link between colon cancer—the second leading cause of cancer death in the United States—and the kinds of fiber and fat in a person's diet is a lot clearer thanks to researchers at **Texas A&M**. After more than five years of research, they found that combinations of the kind of fiber found in oranges, for example, together with fish oil, protect against cancer development. They also discovered a new, non-invasive method to detect changes in colon cells before a person gets colon cancer. The research is helping consumers make more intelligent choices about diet and cancer.
- **Beating the odds.** With more than 30 years of service to low-income families across the nation, the Expanded Foods and Nutrition Education Program (EFNEP) continues to help people improve their nutrition and knowledge about food safety. The program's wide reach includes Native Americans who are 2.4 times more likely to suffer from diet-related diabetes than any other group in the United States. In **Utah**, for example, the average life expectancy for a Ute Tribe member is only 47 years. But that should change now that **Utah State** EFNEP specialists have been working with Ute and Ouray tribes. More than 300 tribe families graduated from the program.

- **Malnutrition matters.** Of the more than 1.5 million Americans over 65 in nursing homes, as many as 85 percent are affected by protein-calorie malnutrition (PCM). By the year 2030, this age group is expected to double while Americans 85 and older will triple. In research that has national implications, scientists at **Washington State** found that nurses and other staff members often lack adequate knowledge to prevent PCM in the elderly. The research findings, which will help extended care facilities deal with similar problems across the nation, include recommendations for nutrition training for management and nursing staffs.
- **Eggs-actly what we need.** Nutritious but high in cholesterol, eggs have not been high on the list of heart-healthy foods. That will change, thanks to **Michigan State** researchers who have developed a new process that extracts 96 percent of the cholesterol from egg yolks while maintaining the egg's original protein and flavor. The patented process, soon to be commercialized, is economical and works on industrial scale. Meanwhile, **Nebraska** and **Texas A&M** scientists have unscrambled the mystery of producing eggs high in healthful omega-3 fatty acids by putting hens on flax seed diets. They say "omega eggs" increase the ratio of good to bad cholesterol and reduce serum triglycerides—another heart disease risk factor—by 14 percent. The process also is licensed for commercial production.



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